

Amendments to the Drawings:

Two new drawing sheets containing Figs. 4A and 4B are attached herewith, in which Figs. 4A and 4B are added to show a conventional door closure discussed in the Background of the Invention. More specifically, Fig. 4A shows a conventional door closure mounted to a door panel and Fig. 4B is longitudinal sectional view of the door closure.

These new drawing figures are added as requested by the Examiner.

Attachment: Two New Drawing Sheets (Figs. 4A and 4B).

REMARKS/ARGUMENTS

Status of Claims

Claims 18 to 35 are pending in this application with claim 18 being the only independent claim. Claims 1-17 were previously cancelled without prejudice or disclaimer. No claim has been amended herein. Reconsideration of the subject application in view of the following remarks is hereby respectfully requested.

Overview of the Office Action

The drawings have been objected to as being incomplete.

Claims 18-35 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Tillmann (US 4,658,468) in view of Fischbach (US 2003/0213092).

Response to Drawing Objection

As is requested in Office Action, new drawing sheets containing Figs. 4A and 4B are added to show a conventional door closure discussed in the Background of the Invention. The Background of the Invention section has been amended to reflect the new Figs. 4A and 4B.

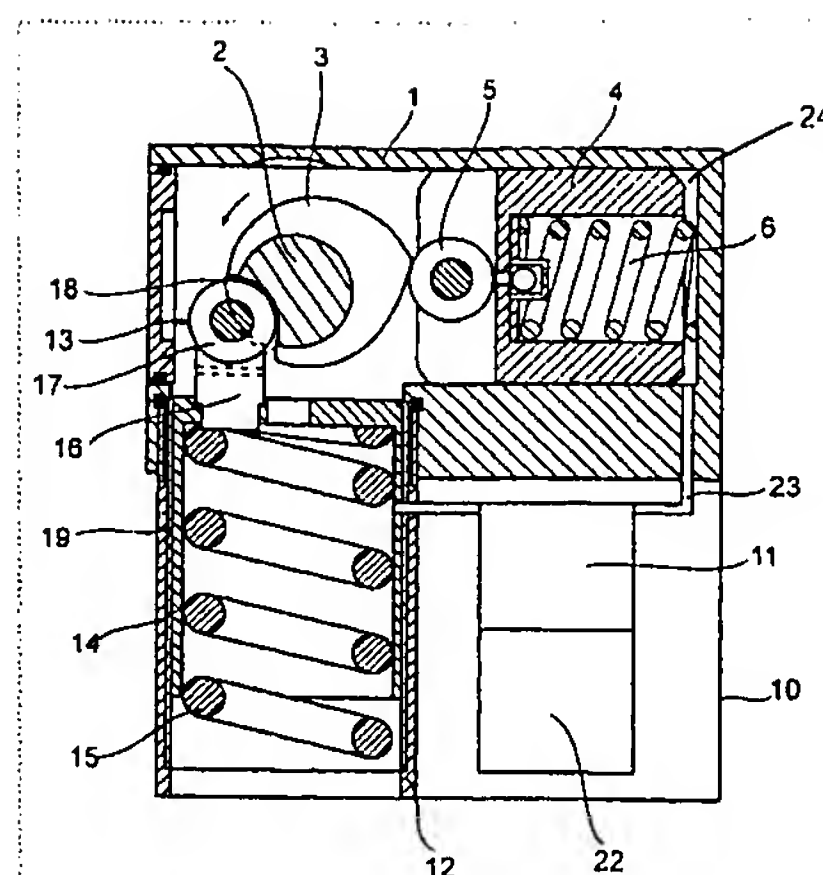
In view of the above drawing amendments, the drawing objection is believed to have been overcome.

Summary of the Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

The subject application discloses a door closer (see, Fig. 1 reproduced below) having a substantially rectangular housing (1). A shaft (2) is rotatably supported in the housing (1) and connectable to a door. The shaft (2) supports an eccentric disc (3), which engages with a roller (5) supported at a brake piston (4). *See*, para. [0027] of published application (i.e., US

2008/0022490). The brake piston (4) is longitudinally displaceably supported in the housing (1) and urged into the direction of the shaft (2) by a spring (6). See, para. [0028] of published application.



A tube-shaped bushing (12) extends orthogonally to and is detachably disposed in the housing (1). A blocking member 13 is longitudinally displaceably supported in the bushing (12). The blocking member (13) has a cup-shaped insert (14), which is supported within the tube-shaped bushing (12) and urged into the shaft direction by a spring (15). See, para. [0031] of published application.

The door closer presents a more compact housing shape and is thus easier to accommodate, particularly in the floor, and is likewise suitable for single action doors.

Patentability of the Claimed Invention

Legal Principle

Manual of Patent Examining Procedure (MPEP) states that reasonable expectation of success is required when combining prior art references:

A rationale to support a conclusion that a claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1395 (2007); *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282, 189 USPQ 449, 453 (1976); *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57, 62-63, 163 USPQ 673, 675 (1969); *Great Atlantic & P. Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 152, 87 USPQ 303, 306 (1950). (See, MPEP § 2143.02.)

In addition, MPEP § 2144.04VI(C) states that:

“The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself

sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

Independent Claim 18

Independent claim 18 recites a door closure, which has "a first spring ... extending orthogonally to the longitudinal housing direction" and "a pump for pumping a brake fluid at least one of to and from the first space, the pump being disposed in a second space formed between the housing and the first spring."

The above recited features of independent claim 18 are not taught by Tillmann and Fischbach because (i) there is no reasonable expectation of success that the proposed combination of Tillmann and Fischbach will arrive at the claimed invention, and (ii) the claimed invention is more than rearrangement of the combined Tillmann and Fischbach as additional modification is required for the combined Tillmann and Fischbach to operate properly.

(i)

The combined Tillmann and Fischbach, as suggested in the Office Action, will render the modified Tillmann inoperable, due to the different operating forces resulting from the different constructions of Tillmann's and Fischbach's mechanisms.

Tillmann and Fischbach are constructed based on two different mechanisms in door closer/drive technology, i.e., cam and toothed rack mechanisms. The door closer in Tillmann employs a cam mechanism (see, col. 6, ll. 62-63 and col. 7, ll. 14-15 and 46 of Tillmann). A roller is provided in the cam mechanism and pressed against the cam, which is attached to an output shaft of the door closer/drive. In such a cam mechanism, the travel path of the roller during the door opening/closing movement is determined by the radial measurements of the cam, such as by the difference between the maximum and minimum radial measurements of the cam.

Fischbach, on the other hand, teaches a door drive with a toothed rack 3, 4 mechanism (see, e.g., Fig. 7 of Fischbach). The toothed rack 3, 4 in Fischbach meshes with a gear-wheel, which is attached to the output shaft of the door closer/drive. The travel path of the toothed rack of Fischbach is determined by the circumferential measurement of the gear-wheel, such as half of its circumferential measurement.

In light of the above, one skilled in the art will appreciate that the toothed rack of Fischbach has a longer travel path during the door opening/closing operation than that of the roller in Tillmann, assuming the same height of housings in the two cited references.

According to the principle of leverage, when the amount of work by an object is determined, the farther the object travels, the smaller the force is required to act on the object. In this case, as Fischbach's toothed rack has a longer travel path, Fischbach requires a lower closing force from the closing spring 7, 8 to be applied to the toothed rack, comparing to the closing force provided by the closing spring 29, 30 of Tillmann.

Moreover, the force applied to the roller 26 in Tillmann's cam mechanism is not transmitted by form but by traction to the cam, thereby further increasing the force applied to the roller 26. Therefore, Tillmann's closing spring 29, 30 is required to apply a much higher force to the roller 26 during operation than the closing spring 7, 8 of Fischbach to the toothed rack 3, 4.

Due to the above stated different construction and operation of Tillmann's and Fischbach's mechanisms, one skilled in the art will not expect any part of Fischbach's toothed rack mechanism, including its motor/pump arrangement, to be applicable to the door closer in Tillmann's cam mechanism. More specifically, one skilled art will appreciate that the force generated by Fischbach's motor/pump arrangement will be inadequate to operate the cam in Tillmann's cam mechanism. Accordingly, the combination of Tillmann and Fischbach fail to teach or suggest predictable results to one skilled in the art and there is no reasonable expectation

of success that the proposed combination of Tillmann and Fischbach will arrive at the claimed invention (MPEP §2143.02).

Independent claim 18 is thus not obvious over Tillmann in view of Fischbach for at least the above reasons.

(ii)

The claimed invention is more than rearrangement of the combined Tillmann and Fischbach as additional modification is required for the combined Tillmann and Fischbach to operate properly.

The Office Action acknowledges that the combined Tillmann and Fischbach fails to teach “a first spring ... extending orthogonally to the longitudinal housing direction” as recited in independent claim 18, but takes the position that independent claim 18 is a rearrangement of the combined references. Applicants disagree based on the following detailed reasons.

As submitted above, Tillmann teaches only a door closer without a door opening mechanism. To arrive at independent claim 18, one skilled in the art is required to integrate an operating mechanism, as the motor/pump arrangement taught by Fischbach, into Tillmann’s door closer. When doing so, Tillmann is to be further modified in order for the newly added operating mechanism to cooperate with the various existing components in Tillmann’s cam mechanism. Neither Tillmann nor Fischbach teach or suggest to one skilled in the art how Tillmann can be further modified to include the operating mechanism, to arrive at the “pump” explicitly recited in independent claim 18.

Moreover, when incorporate the motor pump arrangement of Fischbach into Tillmann, one skilled in the art is required to redesign the motor pump arrangement of Fischbach to meet the force required to operate the cam in Tillmann, due to the difference in the operating forces of these cited references as discussed above in Section (i). There is no teaching in either Tillmann

or Fischbach as to the design details of the additional motor pump arrangement in the modified Tillmann. Consequently, neither Tillmann nor Fischbach teach or suggest redesigning the motor pump arrangement to satisfy the operation of Tillmann. It is the applicants of the subject application who provide the door drive as recited in independent claim 18.

Furthermore, after Tillmann is modified to incorporate Fischbach's motor pump arrangement, as suggested in the Office Action, the resultant modified door closure/drive has a motor pump arrangement in line with the other components of the door drive. In other words, the various components in the modified Tillmann remain in a longitudinal arrangement. In such a case, one skilled in the art is required to rearrange the motor pump arrangement in the modified Tillmann in order to arrive the claimed door drive. Nevertheless, neither Tillmann nor Fischbach teach to rearrange the motor pump below the piston in Fig. 2 of Tillmann. Rather, both Tillmann and Fischbach teach an elongated door closure/drive mechanism. Therefore, the combined Tillmann and Fischbach fail to teach or suggest to one skilled in the art to arrive at a pump "being disposed in a second space formed between the housing and the first spring," as explicitly recited in independent claim 18.

In addition, neither Tillmann nor Fischbach teach or suggest that one or more of the spring 44, the roller 35, and the piston 37 in Tillmann be rotated for about 90° from what is shown in Fig. 2 of Tillmann, in order to arrive at independent claim 18. Instead, both Tillmann and Fischbach teach an elongated door closure/drive mechanism. Therefore, the combined Tillmann and Fischbach fail to teach or suggest to one skilled in the art to arrive at "a first spring ... extending orthogonally to the longitudinal housing direction," as explicitly recited in independent claim 18.

Therefore, even if Tillmann and Fischbach can be combined as suggested in the Office Action, additional modifications are necessary before arriving at independent claim 18.

Accordingly, the claimed invention is more than a rearrangement of the combined Tillmann and Fischbach, as stated in the Office Action. Independent claim 18 is thus not obvious over Tillmann in view of Fischbach for the above additional reasons.

In view of the all above, independent claim 18 patentably distinguishes over Tillmann and Fischbach. Withdrawal of the rejection of independent claim 18 is respectfully requested.

Dependent Claims 19-35

Claims 19-35 depend, directly or indirectly, from allowable independent claim 18 and thus are each allowable therewith. In addition, claims 19-35 include features which serve to even more clearly distinguish the claimed invention over the prior art of record.

Conclusion

Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited. Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

No fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our PTO Deposit Account No. 03-2412.

Respectfully submitted,
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Dated: May 26, 2009